

## No Perfect Potato Seed in U.S.

Standard Strains of Potatoes Rapidly Deteriorating—What Must Be Done.

Of vital interest to potato growers in the Northwest is the information that in the entire United States there are no potatoes entirely free from disease or insect pests. What is to be done in combatting these evils is described in the following article by C. J. McIntosh, news editor for the Oregon Agricultural College.

(Special to the Farm Magazine.)

THAT there are no potatoes grown in the entire United States wholly free from insect and disease pests, and that the race of spuds throughout America is rapidly deteriorating, were two facts of vast importance brought out at the emergency potato convention recently held in Stockton, California. It was claimed in this connection that some of the great and standard strains, such as the Burbank in the West and the Early Rose in the East, are showing unmistakable signs of deterioration.

Treatment by formalin and other fungicides has proven of much practical use in the effort to secure disease-free potatoes. For some of the diseases it has proven to be a perfect control, but for others it is not of the slightest value. Taken all in all the main dependence for growing potatoes that are free from all these pests is to be put in the development of resistant strains, supplemented by proper cultural methods.

### Special Investigation.

A special investigation of the potato-disease question is being made by the department of Plant Pathology. It was in connection with these investigations that Professor Bailey made the trip to Stockton with the party of potato experts from the United States Department of Agriculture and from different parts of Europe. For this potato disease condition is not confined to this country, but has grown to be one of the serious production problems in some of the leading potato countries of the Old World. It is expected that valuable information will be secured in the investigations carried on by the Agricultural College staff of experts, and that much useful knowledge will soon reach the growers through their efforts.

### To Meet Expense.

When asked how growers are expected to make good on the increased cost of producing potatoes for seed that are free from pests and of good quality otherwise, Professor F. D. Bailey, research assistant in plant pathology at the Agricultural College, replied that there are two or three ways in which they will be recompensed for their additional trouble and expense. In the first place, California growers offer a bonus on clean, well grown and properly inspected seed. While the amount of this bonus was not stated, and perhaps cannot be definitely known until determined by actual experience, it will surely be enough to cover cost of inspection, and to pay for the extra work in caring for the crop during its growth and after it is harvested. Extra effort and expense will also be rewarded in increased production and more salable potatoes. The system of rotation by which alone disease-free potatoes can be economically grown should also prove of real value in the general farming system.

### Inspection Necessary.

In view of the rather startling announcement that disease and insect-free potatoes of desirable varieties and type are not produced within the United States and that immense quantities of such are desired for seed in many sections of the country, competition may be depended upon quite largely to advance the price of potatoes that meet all these requirements. It will be necessary in all cases, however, to have the product inspected by competent authorities who certify to the quality of the product if it is to secure the bonus offered by potato men. This inspection need not be very burdensome if generally practiced, and in certain sections of the

United States the work is performed by experts at an expense of not to exceed one cent a sack, according to Professor Bailey.

### Northern Seed Best.

One feature of the situation that is perhaps not generally known, is that seed potatoes even for southern use should be northern grown. Some of the most successful growers in Southern California get northern grown seed as free from pests of all kinds as possible and multiply this seed for general planting the next year by growing an intermediary crop on a convenient hill location near the large delta fields. Mr. Shima, the millionaire Japanese potato grower of the California Delta region, has quite successfully practiced this method of securing desirable seed for several years. The fungous diseases that later attack the plants grown in the low, rich plains affect the first crop but little the first year. After that, however, it is necessary to secure a fresh supply of seed or infection sets in badly.

In this production, Oregon should have a large and important part that would at the same time greatly stimulate the industry in our own

state. Some of the things that would go far toward freeing the Oregon crop from the objectionable features are field selection of seed and its treatment with a good fungicide, the rotation of the potato fields with crops that are non-hosts for the potato diseases, and a rigid inspection of all seed bought and sold.

### Select From Hill.

In order to select the best home-grown seed the condition of the tops of the plant and of the ground in which the crop was grown are matters of importance that can be attended to only by field selection. If selection is made originally from the bin, good looking specimens of desired type may be selected, and yet they may have shown serious infection in the plant. On the other hand, those seed potatoes that are selected in the hill and then examined, carefully after being cleaned, will be almost certain to show symptoms of pests of any important kind, if such pests are present.

But even though the seed shows no indications of disease or insect pests it is best to make assurance doubly sure by giving every bit of it used as seed the standard fungicide treatment. Some of the disease spores are very small and yet extremely tenacious of life, and might be brought into contact with the seed while it was stored. Hence the need of the treatment.

### Remove Culls.

In selecting the field it is not enough that it was not planted to

potatoes the preceding year. It is indispensable to success that the culls of the last crop were removed or made non-vital, since otherwise they may have carried the spores of the worst diseases over into the ground where they will infect the new crop. Where plenty of potato land is on the farm, it might be best to plant potatoes on the same field not oftener than every third year. Infected ground is as fruitful a source of infection as infected seed, and both must be entirely free from the disease if the potatoes are disease-free.

And it is only potatoes that are disease-free and of desirable type and variety, that under the rules of the Western Potato Growers' Association are entitled to the bonus.

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